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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/781,813	02/20/2004	Tutomu Ikeda	04022	3953

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EXAMINER	
JACKSON, TYRONE D	
ART UNIT	**PAPER NUMBER**
2862	

DATE MAILED: 09/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary	Application No.	Applicant(s)	
	10/781,813	IKEDA ET AL.	
	Examiner	Art Unit	
	Tyrone Jackson	2862	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-19 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-19 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 20 February 2004 is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 7/14/2005.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

The drawings are objected to because the reference number 40 in Fig. 2 should be number 41.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-13 and 15-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Hamaoka et al. {EP 1,467,184}.

Regarding claims 1, 5 and 16, Hamaoka et al. discloses a rotational angle detecting device comprising a magnet support (rotor core **11**), two magnets **13** attached to the magnet support so that the magnets produce a magnetic field across a center of rotation in such a way as to cause the magnetic field to be substantially uniform and unidirectional across the center of rotation intersecting a sensor **Fig. 22**, the sensor **15** is disposed within the magnetic field and arranged and constructed to detect a change of direction of the magnetic field as the magnets and sensor rotate relative to each other

and the sensor outputs signals representing a relative rotational angle (column 1, lines 27-36).

Regarding claims 2, 3 and 17 Hamaoka et al. discloses a rotational angle detecting device that includes a pair of magnets disposed substantially symmetrically with respect to the center of rotation and a sensor positioned substantially at the center of rotation **Fig. 22**.

Regarding claim 4, Hamaoka et al. discloses a rotational angle detecting device, in which the magnet support comprises a substantially tubular member (cylindrical rotor core, column 1 lines 12-13), and the two magnets are attached to an inner peripheral surface of the tubular member (column 1 lines 14-15), and the substantially tubular member has a central axis along the center of rotation **Fig. 22.**

Regarding claim 6, Hamaoka et al. discloses a rotational angle detecting device in which each of the magnets has an arc-shaped configuration along a circumferential direction of the tubular member **Fig. 22.**

Regarding claim 7, Hamaoka et al discloses a rotational angle detecting device in which each of the magnets has a thickness in a radial direction of the tubular member, and the thickness of each magnet is substantially uniform along the circumferential direction of the tubular member **Fig. 22.**

Regarding claims 8 and 19, Hamaoka et al. discloses a rotational angle detecting device in which each of the magnets **145, 146** has opposite end surfaces along the circumferential direction **Fig. 19**.

Regarding claim 9, Hamaoka et al. discloses a rotational angle detecting device as described above in which each of the end surfaces of each magnet extends along the radial direction of the tubular member from the inner peripheral surface of the tubular member towards the center of rotation **Fig 19.**

Regarding claim 10, Hamaoka et al. discloses a rotational angle detecting device as described above in which each of the end surfaces comprises a first surface and a second surface that are respectively substantially aligned with a direction of the magnetic field and substantially aligned perpendicular to the direction of the magnetic field **Fig 22.**

Regarding claim 15, Hamaoka et al. discloses a rotational angle detecting device as described above in which the sensor comprises an integrated circuit that includes a magnetic resistance element (column 1 line 25).

Regarding claim 11, Hamaoka et al. discloses a rotational angle detecting device as described above in which each of the magnets extends along an angle measured about the center of rotation **Fig 22**, and the angle is determined such that an error of the output signal from the sensor due to an offset of a location of the sensor away from the center of rotation is less than a predetermined value (the Hall IC may include an offset adjustment, column 8 lines 11-13).

Regarding claims 12 and 13, Hamaoka et al. discloses a rotational angle detecting device as described above, in which the angle is determined based on factors comprising a maximum offset distance tolerance of the sensor from the center of rotation (which depends on the parameters of the system), the material of the magnets,

and a thickness of each of the magnets in a radial direction about the center of rotation (the sensor and the magnets determine the angle, therefore the offset distance tolerance explained above combined with the characteristics of the magnets determine the rotation angle).

Regarding claim 18, Hamaoka et al. discloses a rotational angle detecting device as described above in which each of the end surfaces of the magnets comprises a first surface and a second surface that intersect with each other and are respectively inclined relative to an inner circumferential surface and an outer circumferential surface of each of the magnets by obtuse angles **Fig. 19.**

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hamaoka et al. in view of Kikuchi et al. {6,640,652}. Hamaoka et al. teaches the rotational angle detecting device as described above. Hamaoka et al. does not specifically teach what the magnets are made of. Kikuchi et al. teaches a rotation angle detecting device that uses a magnet made of ferrite-based magnetic materials (column 8 line 3). It would have been obvious to one of ordinary skill in the art at the time the

invention was made to make the magnets taught by Hamaoka et al. out of ferrite-based magnetic materials as taught by Kikuchi et al. because it is well known in the art that the typical magnet is made of ferrite (column 8 line 3).

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patent 6,501,265 discloses a similar rotational detection device.

Remarks

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Tyrone Jackson

August 25, 2005